

## *AP Physics 1*

### *2019-2020*

#### I. Course Description

##### A. *Objective*

This course is designed to be the equivalent of the first semester of an algebra-based college physics course. AP Physics covers topics and information normally contained in a first-semester college algebra-based college course. This course is intended to prepare students for success on the AP Physics Exam. Through inquiry-based learning, students will develop critical thinking and reasoning skills. Whether or not college credit will be given will be determined by the college attended by the student and the score on the AP test. The AP Physics exam will be given **Thursday, May 7**, at 12:00 noon.

##### B. *Lab*

At lot of class time will be spent doing laboratory work. Students will be required to complete a report for each lab. The complexity of the report will vary. Most of the labs will prepare students specifically for the AP test. Students will not be excused from completing these assignments.

##### C. *Homework*

Some homework will be completed through an online program called Mastering Physics. The advantage of this program is that students can receive immediate feedback and hints as necessary as they complete their homework. Students who do not have Internet access at home may print the assignment and enter answers before class. Students will receive login information as soon as possible. Other homework will include discussion questions and completing lab reports.

##### D. *Quizzes*

Brief announced quizzes may be given during each nine week period. Some quizzes will be used for self-evaluation.

##### E. *Writing*

Writing in the content area has been proven to be an effective method to improve comprehension. The ability to communicate understanding of concepts and reason through complex steps is crucial to success on the AP Physics test. To ensure success, students will complete frequent writing assignments. Some of these will be shared with the class.

##### F. *Tests*

Students should expect several tests during the nine weeks and a cumulative final exam. The final exams for the first three nine weeks will model the AP Physics test and will take two days. Students will be able to review graded tests and exams, but tests will not be returned to students.

##### G. *Notebook*

All students are required to keep notes, textbook assignments, and class work in an organized notebook.

##### H. *Calculator*

It is highly recommended that each student have his/her own calculator. A calculator with an exponential function and a logarithm key (often called a scientific calculator) is preferred. Students will not be allowed to share calculators during a quiz or test.

## II. Materials

### A. *Textbook*

*College Physics*, Etkina, Gentile & Van Heuvelen, Pearson, 2014

Replacement cost: \$152.97

### B. *Notebook*

### C. *Scientific calculator* (highly recommended)

## III. Outline

The following topics will be covered this year. Any additional time will be used for enrichment and remediation activities.

Kinematics

Dynamics

Circular Motion and Gravitation

Energy

Momentum

Simple Harmonic Motion

Torque and Rotational Motion

Electric Charge and Electric Force

DC Circuits

Mechanical Waves and Sound

## IV. Evaluation of students' work

### A. *Grades*

Unit tests 50%

Labs 20%

Final Exam 20%

Daily work 10%

For at least the first nine weeks, students will be able to correct mistakes on unit tests for half credit. Students will have to provide explanations with their answers to earn the credit. They will have one week (5 school days) to make corrections before school. Other times can be worked out in advance if needed. Students will only be able to come one time to correct each test. The total number of points that may be earned on each test will be limited to 20 for the first nine weeks and will decrease each nine weeks. After the first nine weeks, this practice may be modified. Students will not be able to make corrections on the final exams.

The lowest daily grade will be dropped at the end of each nine weeks.

### B. *Tardies*

Students who are late to class more than three times in one nine weeks will receive detention.

After five tardies, the student will be referred to the administration. If a student has a legitimate reason for being late, it is the responsibility of the student to provide documentation indicating so. Work that is turned in late because of an unexcused tardy will be marked late.

### C. *Make-up work*

Students who are absent should make up any work missed as soon as possible within three days. In the event that an absence is foreseen (school trips, doctor appointments, etc.) the student should find out assignments ahead of time so that no work will be turned in late.

### D. *Late work*

Students are expected to turn in all assignments at the **beginning** of class on the day that they are due. Any work turned in after it is called for is considered late and will receive a 20 point penalty. No assignments will be accepted after they have been handed back to students.

E. *Cheating*

Copying another student's work or allowing another student to copy work on any assignment or test is considered cheating. Also, using any prohibited materials on a quiz or test is cheating. This will result in a grade of zero for that assignment, referral to the office, and possible notification of parents.

F. *Additional support*

Students are encouraged to seek additional help as soon as possible when needed.

Arrangements may be made after school. Keep in mind that it is important to keep up with all work daily.

V. **Classroom environment**

Students are expected to conduct themselves in a mature and respectful manner at all times.

Behavior that distracts other students or the teacher will not be tolerated. Students are to be in their seats when the tardy bell rings and remain there until the teacher dismisses the class or gives permission to stand up. All school rules will be enforced.

VI. **Extra Credit Opportunities**

Students may receive extra credit for the following activities. The quality of the project should be comparable to AP level work. No work should begin without prior approval. Students will not receive credit for work that was not preapproved or work that is not high quality.

A. **Science Project.** Students may receive an extra test grade for the first-third nine weeks, the fourth nine weeks if the student advances to state. See instructor for work that must be completed each nine weeks.

B. **Exploravision.** Students may receive an extra test grade for the first & second nine weeks, the third nine weeks if the student receives Honorable Mention or Region Winner status. See instructor for work that must be completed each nine weeks.

C. **Envirothon.** Students may receive extra credit for the second and third nine weeks for being a valuable member of an Envirothon team. See instructor for more information.